

# WEST

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## Document Number 2

Entry 2 of 2

File: USPT

Jan 19, 1999

DOCUMENT-IDENTIFIER: US 5861483 A

TITLE: Inhibitor of stem cell proliferation and uses thereof

BSPU:

Phe-Pro-His-Phe-Asp-Leu-Ser-His-Gly-Ser-Ala-Gln-Val, (SEQ ID NO:1)

DETL:

43-55 Phe--Pro--His--Phe--Asp--Leu--Ser--His--Gly--Ser--Ala--Gln--Val (SEQ ID NO: 1) c(43-55)  
Cys--Phe--Pro--His--Phe--Asp--Leu--Ser--His--Gly--Ser--Ala--Gln--Val--Cys (SEQ ID NO: 2) (where the two Cys residues are disulfide-bonded) 64-82  
Asp--Ala--Leu--Thr--Asn--Ala--Val--Ala--His--Val--Asp--Asp--Met--Pro--Asn--Ala--Leu--Ser--Ala (SEQ ID NO: 3)

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## Document Number 2

Entry 2 of 4

File: USPT

Jan 19, 1999

US-PAT-NO: 5861483

DOCUMENT-IDENTIFIER: US 5861483 A

TITLE: Inhibitor of stem cell proliferation and uses thereof

DATE-ISSUED: January 19, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wolpe; Stephen D.	Rockville	MD	N/A	N/A

US-CL-CURRENT: 530/385; 435/69.1, 530/350, 530/380

## CLAIMS:

What is claimed is:

1. A polypeptide comprising amino acid residues 1-97 of a full length hemoglobin alpha chain, wherein the full length hemoglobin alpha chain comprises a C-terminal hydrophobic domain, wherein a portion of the C-terminal hydrophobic domain of said full length hemoglobin alpha chain domain has been substituted or deleted, said substituted comprising substituting more than one hydrophobic amino acid of said domain with a non polar amino acid and said deleted comprises deleting more than one hydrophobic amino acid of said domain, wherein said hydrophobic amino acid is selected from the group consisting of alanine, valine, leucine, proline and phenylalanine; wherein said non polar amino acids are selected from the group consisting of glycine, serine, threonine, cysteine, tyrosine asparagine and glutamine; and wherein said polypeptide has improved solubility when compared to the solubility of said full length hemoglobin alpha chain.
2. A polypeptide comprising a hemoglobin alpha chain domain according to claim 1, wherein said portion is in the region of amino acids 121-127 of the C-terminal haptoglobin binding domain which has been substituted or deleted such that said domain no longer binds to haptoglobin.
3. A polypeptide consisting of amino acids 1-97 of the human alpha hemoglobin chain.
4. A composition comprising (a) a polypeptide as in claim 1 or 2 and (b) a pharmaceutically acceptable carrier.
5. A composition comprising a polypeptide consisting of amino acids 1-97 of the human alpha hemoglobin chain and a pharmaceutically acceptable carrier.
6. A composition as in claim 4 comprising 0.1 mg to 6 g of a polypeptide consisting of the sequence of amino acids 1-97 of the human alpha hemoglobin chain.
7. A method for expressing the polypeptide of claim 1 comprising expressing the polypeptide of claim 1 in a host cell, and recovering the polypeptide.

8. A composition comprising a polypeptide consisting of amino acids 1-97 of the human alpha hemoglobin chain and a pharmaceutically acceptable carrier.
9. A composition comprising a polypeptide consisting of amino acids 1-97 of the human alpha hemoglobin chain and a carrier.
10. A fusion protein comprising an alpha hemoglobin chain and a heterologous polypeptide, the heterologous polypeptide being a portion of the alpha hemoglobin chain.
11. A polypeptide consisting of amino acids 1-97 of the human alpha hemoglobin chain and a pharmaceutically acceptable carrier.
12. A polypeptide comprising an alpha hemoglobin chain having a deletion of one or more amino acids.

or 2 and a heterologous polypeptide.

15. A composition comprising a polypeptide according to any of claim 1 or and a carrier.

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